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## Focus 2006: A Strategic Vision for 2001-2006

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MINERALS AND METALS SECTOR

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Natural Resources  
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**Focus 2006: A Strategic Vision For 2001-2006**

**Minerals and Metals Sector**



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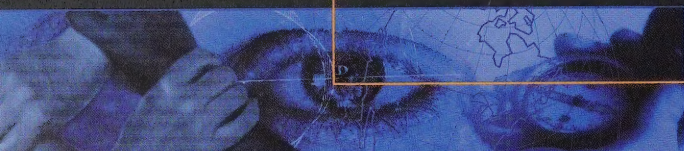


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**FOCUS on**



**2006**



## A Message from the Assistant Deputy Minister

Minerals and metals have played a powerful role in the economic and social life of Canadian communities for more than 150 years. In working with the industry, other government departments, provincial governments and other partners, we at the Minerals and Metals Sector (MMS) of Natural Resources Canada have long been at the forefront of minerals and metals science and policy, working in every region of the country and in the international arena.

The Sector today has a very broad mandate relating to minerals, metals and explosives. We are working hard to ensure we can respond to the increasing demands on our legislated responsibilities. At the same time, few additional resources will be available to federal departments. Therefore, careful choices will need to be made.

In recent years, the minerals and metals industries in Canada have begun a fundamental transformation — a transformation that is, in some cases, in response to globalization or environmental challenges and, in others, a transformation that is driven by the opportunities created by the information technology revolution.

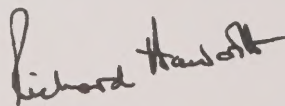
We at MMS need to anticipate and understand these changes, establish a clear vision of what we want to achieve, and set out effective strategies for realizing this vision.

This is the objective of *Focus 2006* — to articulate for ourselves, our clients and our partners how we see our world evolving over the next five years and how we see MMS contributing to that world.

We want to communicate with all Canadians for they are our ultimate client. We must always demonstrate that we are relevant, that we are reflecting the government's priorities and helping to shape them, and that we have a clear sense of where we need to be headed to contribute most effectively to the quality of life of Canadians.

But the vision's first audience must be those who will help us realize our goals and make the vision a reality: the hundreds of dedicated, hardworking individuals who comprise MMS and whose day-to-day commitment to the work of the organization is its core strength. To succeed, the vision needs the energy and enthusiasm of our employees.

The vision must also be a living concept for MMS — remaining on our desks and in our minds — to make us stop and think, to challenge us, to guide our planning decisions over the coming years, and to help us judge our progress. It will guide us in the development of our annual business plans, in our reporting to senior decision-makers and the Canadian public, and in the workings of our collaborative actions.



Richard T. Haworth, Ph.D.

Assistant Deputy Minister  
Minerals and Metals Sector







## Our Vision

Canada will be a role model for the world in applying sustainable development through good stewardship of its minerals and metals resources to enhance the quality of life of Canadians and their communities.

## MMS Mission

The MMS mission is to advise the Government on — and to advance its agenda for — the economic, social, environmental, scientific and technological spheres through the development and use of minerals and metals.

An important role for MMS is to generate and share knowledge as a basis for sound decision-making that affects the sustainable development of minerals and metals for the benefit of Canadians.

## MMS Mandate

The MMS mandate derives from the *Department of Natural Resources Act (1994)*, the *Resources and Technical Surveys Act*, the *Explosives Act*, the *Income Tax Act* and the *Excise Tax Act*.

Under the authority of the *Department of Natural Resources Act (1994)* and on behalf of the Minister, MMS:

- has regard to the sustainable development of Canada's natural resources;
- assists in the development of Canadian scientific and technological capabilities;
- seeks to enhance the responsible development and use of Canada's natural resources and the competitiveness of Canada's natural resource products;
- participates in the enhancement and promotion of market access;
- promotes cooperation with governments and non-governmental organizations (NGOs) in Canada and internationally; and
- gathers, compiles, analyzes, coordinates and disseminates information.

The *Resources and Technical Surveys Act* provides the authority under which MMS, on behalf of the Minister, collects, compiles and publishes statistics on mineral exploration, development and production, and on Canada's mining and metallurgical industries. MMS is responsible for collecting and publishing economic data related to the processes and activities associated with the use of minerals and metals and for preserving records of mines and mining works in Canada.

In the administration of the *Explosives Act* and regulations, MMS is responsible for classifying explosives and issuing licences, permits and certificates for the manufacture, importation, sale and storage of blasting explosives, ammunition, propellants, fireworks and pyrotechnics.

Under the *Income Tax Act* and the *Excise Tax Act*, MMS fulfills the Minister's mandate by issuing certifications, rulings and opinions on the interpretation and application of these statutes to the mineral industry.

MMS also undertakes responsibilities under a variety of agreements and memoranda of understanding with the provinces, territories and other federal departments.

## Focus on NRCan's Vision:

The vision of the Minerals and Metals Sector was developed to support the vision of Natural Resources Canada:

*"As we enter the new millennium, Canada must become and remain the world's 'smartest' natural resources steward, developer, user and exporter – the most high-tech, the most environmentally friendly, the most socially responsible, the most productive and competitive – leading the world as a living model of sustainable development."*

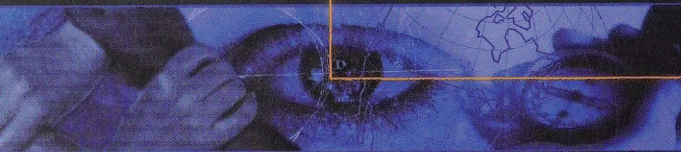
## Focus on NRCan's Mission:

*Focus 2006* will facilitate the achievement of Natural Resources Canada's mission by the Minerals and Metals Sector:

*"Natural Resources Canada provides the knowledge and expertise for the sustainable development and use of Canada's natural resources and the global competitiveness of the resource and related sectors for the well-being of present and future generations."*



**FOCUS on**



**Shaping Our Future**



# Trends That Will Shape Our Future

Today's trends become tomorrow's reality. In considering the future directions for MMS, we need to look at the current and emerging trends that will affect the world in which we work. Some of these trends are internal to government and others extend beyond our borders. Over the coming years, we must anticipate them, understand their implications, and seek out the opportunities they present.

## 1. NRCan's Commitment to Sustainable Development

Sustainable development has become a driving force in how the department works and a fundamental objective for all future activities. The ability of Canada to use its abundant natural resource endowment wisely – integrating economic, social and environmental concerns into long-term sustainable development – is recognized as a key contributing factor in enhancing the quality of life of all Canadians.

The *Department of Natural Resources Act* was among the first pieces of federal legislation to enshrine sustainable development as a guiding principle. More recently, the department's *Sustainable Development Strategy* identified six major themes where the department believes it can "make a difference" in helping sustainable development become a part of how Canadians live and work:

- climate change;
- corporate stewardship and accountability;
- innovation;
- knowledge, information, education and communication;
- leadership and partnerships; and
- sustainable communities.

MMS will be challenged to continue bringing these themes into the day-to-day management and long-term stewardship of Canada's mineral and metal resources. We have made important gains in this area already. For example, Canada's *Minerals and Metals Policy* is considered a model in demonstrating the integration of the concept of sustainable development into governance affecting natural resource use.

## 2. Fundamental Changes in the Role of the Federal Government

The past decade has seen a dramatic shift in the role of the Government of Canada, setting in motion approaches that are certain to affect the future of MMS.

At the heart of the changes in the role of the federal government has been an emphasis on good governance and citizen

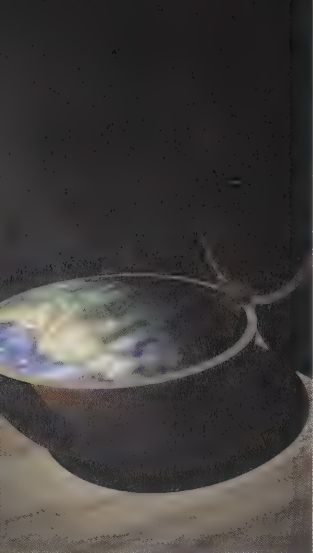
## Focus on Sustainable Development for Minerals and Metals:

Sustainable development means development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

*The Minerals and Metals Policy of the Government of Canada* defines sustainable development as it relates to the development of minerals and metals:

- finding, extracting, producing, adding value to, using, re-using, recycling and, when necessary, disposing of mineral and metal products in the most efficient, competitive and environmentally responsible manner, utilizing best practices;
- respecting the needs and values of all resource users, and considering those needs and values in government decision-making;
- maintaining or enhancing the quality of life and the environment for present and future generations;
- securing the involvement and participation of stakeholders, individuals and communities in decision-making.





empowerment. As a result, there have been increased efforts to improve the value and quality of government service, to build a more efficient and effective federation with the provinces and territories, and to work through partnerships.

With respect to minerals and metals, the federal government's role is based on a fundamental recognition of provincial/territorial ownership and management of mineral resources – from the exploration for and development of mineral resources to the construction, management, reclamation and close-out of mine sites. The federal role is sharply focused on core federal responsibilities, including the fiscal framework, international trade and investment, science and technology, environmental protection, and Aboriginal affairs.

Increasingly, the federal government's emphasis on good governance and citizen empowerment will demand greater attention to openness in decision-making and accountability of performance by government organizations such as ours. This also means that we must expand our efforts to build horizontal collaborative actions with other governments, industry, local communities, Aboriginals, non-governmental organizations and others.

The trend toward greater self-government for Aboriginal peoples also has important implications for the future of MMS. Aboriginal peoples need to be involved to a greater extent in decision-making about mineral exploration and development activities that may affect their traditional lifestyles or that can serve as the foundation of community economic development. We must collaborate more effectively among governments, industry and Aboriginal communities.

Finally, as an organization based on science and technology, MMS will be shaped by federal government S&T priorities that may emerge in the coming years. For example, the Council of S&T Advisors recently recommended that S&T performed and funded by the federal government be linked with other activities within the federal government, with the other sectors involved in innovation (particularly universities and the private sector), and with the global pool of knowledge and technology. Further, the Council urged that federal departments and agencies perform only the S&T that is needed to support their mandates and that cannot be obtained more effectively from other sources. It proposed that federal S&T focus on four key roles: support for decision-making, policy development and regulations; development and management of standards; support for public health, safety, environmental and/or defence needs; and enabling economic and social development.



### 3. Public Views on Minerals and Metals

One of the critical trends affecting minerals and metals development and use in the coming years will be public attitudes toward resource industries. In many countries, including Canada, public attitudes toward resource industries have become sharply divided.

On the one hand, public concerns have emerged about adverse environmental legacies, and some groups have called for more restrictive operating regimes for industry. At the same time, worldwide demand for resources is increasing as our way of life has never been more dependent on minerals and metals. Many countries are competing fiercely for industry in a competitive global market. There is also increasing focus on the role minerals and metals can play in lessening regional disparities and building social cohesion in rural and remote communities.

This mix of public attitudes presents significant challenges to MMS. To meet these challenges, we will need our policy experience and sound scientific and economic expertise.

We will need to broaden understanding and build consensus among all those involved in Canada's minerals and metals sector so that the industry can continue contributing to the quality of life of Canadians and their communities. We will have to promote the industry's high standards of environmental stewardship and safety and security that Canadians deserve and expect. We will need to look for innovative, effective ways to ensure that communities in rural and northern Canada continue to benefit economically and socially from minerals and metals development.

### 4. A Canadian Industry Undergoing Structural Change

In the coming years, MMS will be working with Canadian minerals and metals industries that have undergone rapid and wide-ranging transformation as a result of globalization and related emerging trends – trends that are bound to intensify.

Major companies in all countries are becoming increasingly multinational in nature. Others have consolidated to remain internationally competitive. Competition for global investment is intense, and the production of some minerals and metals is shifting among countries in response to comparative costs, accessibility and business climates. In Canada, equipment, services and technologies related to minerals and metals are becoming increasingly important to the Canadian economy. Already, Canadian financial and legal institutions have emerged as key players in the globalization of the world's minerals and metals industries.







In response to these trends, Canada's industries are experiencing profound structural change. Over the next 20 years, for example, Canada's domestic share of world mine production for some base metals (e.g., copper, zinc and lead) is expected to decline. At the same time, Canada's share of world markets for light metals (e.g., magnesium) and non-metallic minerals (e.g., potash and diamonds) will likely grow and Canada will continue to lead the world in uranium production.

As a result of the structural changes being experienced by the Canadian industry today, the Canadian small- and medium-sized enterprises (SMEs) that supply equipment and services are seeing a shift in their markets. Globalization of the mining industry is creating opportunities for these companies to market their knowledge and products to new offshore markets, allowing them to enhance the important role they play in regional development.

The new technologies developed today and in the future will be based on more sophisticated minerals and metals that require specialty processing and treatment. The Canadian minerals and metals industries need to develop and have access to new technologies in order to continue to add value to the Canadian economy and to showcase Canada as a world leader in minerals and metals exploration and development.

Worldwide changes in the energy market have had a profound impact on the Canadian minerals and metals processing industries. Canada's mining industry is a major user of energy and it will need to direct increasing attention in the years ahead to reducing the economic and environmental costs that result from this.

There is likely to be a steady depletion in accessible ore reserves of some commodities in Canada. Major technological barriers and environmental and economic challenges must be overcome to develop previously unexploited resources, such as deeper deposits and those in Canada's North and marine offshore. There are also some serious challenges to expanding access to base metals and gold deposits in Canada. To mine current deposits deeper involves some increased risks to worker safety. Deposits in Canada's North present unique challenges in terms of affordable access, infrastructure, transportation and environmental sensitivity. Success in meeting the challenge of competitive transportation is fundamental to the achievement of greater self-sufficiency and increased living standards in the North and is also an important element in Canada's international success.



In the face of intense global competitive pressures, Canadian minerals and metals producers and related suppliers need to be flexible and innovative to reduce costs, improve productivity, and remain competitive in international markets. In response to declining high-quality domestic ore reserves, for example, some Canadian smelters have already shifted to feedstocks from overseas sources. Pressure from the mining industry on its suppliers has led to drastic changes in the explosives industry in the search for lower costs.

MMS needs to ensure that it has the scientific and policy information and expertise to understand the implications of this global transformation and what it means for Canada. Through its regulatory and fiscal framework, Canada must be viewed as a "region of choice" for investment.

In working with industry and other partners, we also must be in a position to identify and take advantage of emerging opportunities presented by fundamental shifts in the industry. In Canada, employment and production in primary minerals and metals activity have remained stagnant or even declined over the past decade. Yet total output and employment in the sector have risen, thanks to impressive growth in downstream, value-added activities, particularly minerals and metals processing. This trend will likely gain momentum.

Materials handling, for example, particularly recycling, will become a key area of industry growth in the coming years as valuable energy and materials are recovered that would otherwise be lost or remain as waste. Designing products for recyclability will likely be a significant growth opportunity — already, recycling has become the primary source of metal in some regions, including Europe. MMS researchers will continue to make important contributions to safe and environmentally sound materials handling.







Wetcover of Mine Tailings  
NRCan Photo Library

## 5. The Merging of Economic, Environmental and Social Agendas

We are beginning to see the merging of broad economic, environmental and social agendas around the world, a trend with far-reaching implications for Canada.

The relatively rapid introduction of democratic institutions and market economies is under way in many countries. New global environmental challenges related to climate change, air pollution, and water supply and quality are leading to more focused attention on human health, safety and security, and to more complex regulations that address specific environmental effects such as toxicity and air emissions.

But unlike in the past when these various issues might have operated in relative isolation from one another, we now are seeing a greater interweaving and synergy among specific issues. A highly visible example is the coalition of grassroots environmental, social and political groups that have come together to protest the proposed liberalization of world trade arrangements. Similarly, accidents and terrorist attacks involving explosives on public institutions and other civilian targets have made headlines around the world in recent years. International organizations and institutional mechanisms have become both the focus of protests and the fora for addressing social, economic and environmental concerns with respect to trade and competitiveness issues.

This merging of separate agendas has led to a heightened sense of visibility and vulnerability on many international issues. There is a growing recognition that, from a policy perspective, "everything is related to everything else" – any global issue, whether economic, environmental or social, could affect Canada's minerals and metals industries and, in turn, the Canadian economy.

With 80% of its minerals and metals production exported, accounting for about 13% of the country's total export earnings, Canada is particularly vulnerable to trade disruptions and to market barriers imposed by foreign trading partners. Canada, therefore, will need to remain an active, effective and influential player on the international stage. We will need to remain aware of and sensitive to potential threats to our markets and to other international developments so that Canada and Canadian industry remain competitive. Solutions at the international level, however, will be more difficult and complex to hammer out.

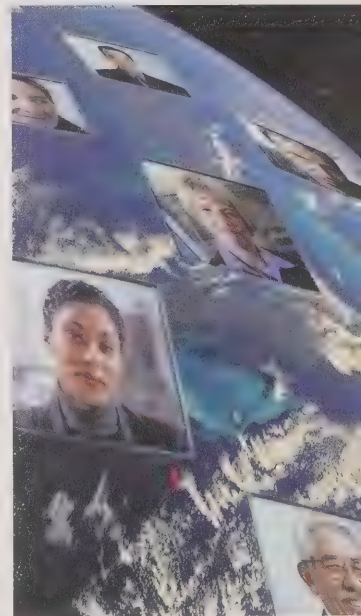


For its part, MMS will need to be in a position to operate effectively in this "faster, smaller world" – a world that is, in a sense, without borders in terms of mobility of capital, information and skilled people. This calls for greater flexibility and a capacity to anticipate and respond strategically.

With its leading-edge expertise in explosives technology and policy, for example, MMS will contribute to the increasingly important cooperative global efforts to counter terrorism. These efforts include international agreements to control the distribution of firearms, ammunition and explosives that are now being developed through several international organizations such as the United Nations and the Organization of American States. Future challenges will include inspection and enforcement measures to ensure that Canada's explosives supply remains safe and secure.

We will also need to respond to the growing public interest in the environment that could result in increasing pressures for regulations and increased environmental compliance costs, or that could force minerals and metals operations to obtain certification for sustainability in order to secure markets. MMS will need to work with industry and foreign governments to promote responsible actions by the minerals and metals industries. Promoting a more positive image of the industry will enhance the national and international awareness of the environmental, economic and social benefits of resource development by Canadian companies.

On a related front, a number of Canadian companies have successfully developed a geographically diversified portfolio of minerals and metals projects, and this can be expected to continue. Canadians have invested \$40 billion overseas in exploration and mining. Such investment and activities bring benefits to Canada, such as the supply from Canada of mining equipment and services to Canadian overseas operations. It will be important to ensure that these benefits are protected through fair and equitable trade and investment policies and measures for Canadian companies in the host countries. At the same time, the Government of Canada is committed to seeing that these companies engage in ethical and sustainable conduct in their operations abroad, consistent with the values of Canadians.





## **6. Implications of the Knowledge Economy**

Canada's resource industries will continue to be a major source of growth and prosperity because of, not in spite of, the information technology revolution.

While perceived by some as symbols of the "old economy," Canada's minerals and metals industries are integral to the new knowledge-based society. The split between the "old" and "new" economies is an artificial one. We have a single economy with new technology that is transforming, not replacing, Canada's traditional industrial base.

The currency of the future integrated global economy will be knowledge – the ability to create it, the power to share it with those who need it, and the capacity to access it on demand. For example, expansion of the automation of mining operations will result in an increasing demand for knowledge-based workers. In the area of marketing, trade expansion for natural resources will rely increasingly on trade facilitation and the Internet than on further rounds of multi-lateral trade liberalization. E-commerce, "24/7" electronic stock exchanges, business-to-business (B2B) auctions on the Web – these are the tools of the knowledge economy.

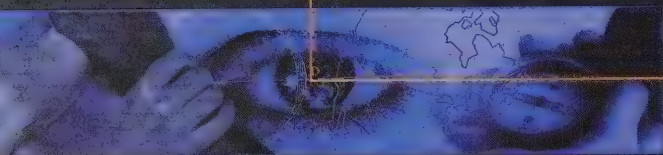
The knowledge economy will place a premium on the role of MMS as a knowledge generator and knowledge broker. MMS will need to partner with industry on knowledge-sharing as the key to productivity gains and international competitiveness. The training and recruiting of knowledge workers are other challenges. In this effort, governments and industry will need to engage Canadian educators to ensure that we identify and develop the skills needed for the knowledge economy. As well, a more positive image of the industry and expanded cooperative work programs will be needed to attract people into careers in the sector.







**FOCUS on**



**Strategic Directions**



## Our Course to 2006

To achieve our vision and respond to the wide-ranging, cross-cutting forces affecting MMS, we have established four fundamental and mutually reinforcing strategic directions for the next five years:

1. Champion Innovation.
2. Ensure a Strong International Voice for Canada.
3. Contribute to the Health, Safety and Security of Canadian Communities.
4. Sustain a Vibrant and Responsible Canadian Industry.

### Strategic Direction 1: Champion Innovation

Innovation in all stages of the minerals and metals life cycle is needed if Canada is to remain competitive in global markets, capture new emerging opportunities for economic growth, and address the related social values and environmental concerns of Canadians over the next five years.

We plan to work towards this strategic direction through initiatives under the following objectives:

#### **1.1 Promote the development and adoption of technologies and life-cycle management approaches that reflect sustainable development concepts**

Life-cycle assessment (LCA) is emerging as an important tool to measure the potential environmental impact of a product, thereby enabling designers to choose the material that best supports sustainable development principles.

MMS, for example, will organize workshops with key stakeholders to increase the level of understanding regarding the application of LCA to minerals and metals and ensure the development and adoption of scientifically sound approaches for minerals and metals.

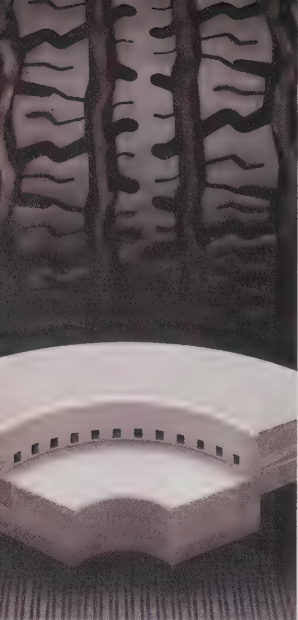
#### **1.2 Develop and transfer innovative approaches to improving efficiency in resource development and in production processes**

In the face of global competitive pressures and problems with accessing resources at home, the Canadian minerals and metals industries will remain viable in Canada through gains in efficiency, thereby safeguarding the benefits to Canada

#### **Focus on Innovation:**

*"Our objective should be no less than to be recognized as one of the most innovative countries in the world,"*  
Speech from the Throne, January 2001.

- In 2000, mining and mineral processing industries invested \$323 million in intramural research and development.



Brake Rotor

Aluminum-based composite brake rotor fabricated by CANMET offering lighter weight and better wear resistance than conventional cast iron brake rotors. When compared to commercial aluminum-based composite brake rotors, CANMET's product provides better high-temperature properties and selective reinforcement for cost reduction in machining.

NRCan Photo Library

from the development and use of its endowment of natural resources.

For example, in partnership with industry, MMS will refine ore processing technologies to improve energy efficiency and increase the rate of recovery while minimizing overall costs.

### **1.3 Enhance value-added and high-growth opportunities in the minerals and metals industries**

The quality of life of Canadians will be enhanced as Canada's minerals and metals industries expand output and increase employment by taking advantage of high-growth opportunities in specialty areas.

In working towards this objective, MMS will partner with Canadian companies to develop leading-edge technologies, such as nanotechnologies for the manufacturing of fuel cells, batteries, sensors, structural materials and coatings, to add value to Canada's resource base while opening up new economic opportunities for Canadians.

### **1.4 Design and evaluate environmentally friendly materials and technologies related to minerals and metals**

A greater focus on environmentally friendly materials and products will allow the minerals and metals industries to extend the value of natural resources, strengthen their contribution to sustainable development, reduce the environmental "footprint" of minerals and metals, promote a responsible image among the Canadian public, and develop niche market opportunities, including the use of biotechnology.

MMS, for example, will develop, in partnership with industry, lightweight materials for the transportation sector that will help increase fuel efficiency and consequently decrease vehicle air emissions.



## Strategic Direction 2: Ensure a Strong International Voice for Canada

Canada's minerals and metals industries operate in a truly global environment that brings with it both opportunities for growth and diversification, and challenges such as intense competitive pressures, market uncertainties, and vulnerability to trade and fiscal policies (and their administration) in other countries.

Canada must remain a strong and active player on the international scene – helping protect Canadian investment and trade, helping ensure that Canadian companies are treated fairly and equitably in other countries, identifying international business opportunities for Canadian firms, and helping share Canadian experience, skills and values in order to enhance industry practices worldwide in support of sustainable development.

MMS, therefore, must become more involved internationally to ensure that Canada's voice remains strong. This will mean being involved in such issues as metal use restrictions, environmental protection, international business development, global regulatory measures, human health, safety and security – all high-profile issues that cut across the lines of environmental, economic and social trends. These lines are blurring and becoming more interwoven and complex; they demand up-to-date, reliable statistics and scientific data in support of policy and fiscal responses.

We plan to work towards this strategic direction through initiatives under the following objectives:

### 2.1 Demonstrate leadership and promote abroad Canadian approaches to the sustainable development of minerals and metals

Canadian leadership on the sustainable development of minerals and metals will help influence the policy frameworks of other countries and help win international support for addressing issues of common concern.

For example, MMS will showcase Canadian S&T and policy expertise, transfer technical expertise, and assist countries in the development of sustainable development policy approaches through international institutions and projects.

### 2.2 Promote a sustainable development-based business climate abroad for minerals and metals that provides benefits to Canada

Fair and equitable treatment for Canadian industries in other countries will help those firms gain access to resources and remain internationally competitive.

## Focus Internationally:

Minerals and metals industries operate in a global environment. International trade and market access are essential to a strong Canadian economy.

- \$49.1 billion in domestic exports in 2000;
- 12.78% of all exports in 2000;
- 80% of production exported;
- Canadian mining companies are involved in more than 6000 projects at all stages of the mineral resource development and mining process in over 100 countries around the world;
- during 2000, Canadian companies conducted more than 30% of all mineral exploration programs around the world;
- of the \$260 billion Canadians invested abroad, \$40 billion was invested in exploration and mining.

For example, MMS, in cooperation with the Department of Foreign Affairs and International Trade, will provide technical and policy support for advocacy activities on behalf of Canadian investors abroad to encourage foreign countries to adopt fair and equitable fiscal and regulatory measures. This will help protect the value of Canadian investments abroad and the resultant benefits to Canada.

### **2.3 Maintain and expand access to international markets for Canadian minerals, metals and related services and equipment**

The challenge of access to international markets is of paramount importance to the long-term health of Canada's minerals and metals industries. Canada has a unique opportunity to help ensure greater market access – it can directly participate in and actively promote Canadian policy approaches and avoid the development of unwarranted barriers. It also has a global leadership role in this area, and other mineral and metal-producing countries tend not to become involved if Canada is not active.

For example, MMS will develop sound scientific approaches for the classification of metals and metal products and promote their acceptance by international organizations such as the Organization for Economic Co-operation and Development (OECD) to ensure that environmental protection decisions regarding metals are commensurate with the real risk that they pose.

### **2.4 Partner with industry, foreign governments and other stakeholders to achieve and demonstrate excellence in performance**

Canada's minerals and metals industries have the opportunity to develop a stronger image, both at home and abroad, as leaders in environmentally and socially responsible performance – an image that can be an important comparative advantage in the international marketplace.

For example, MMS will encourage the Canadian industry to work with stakeholders such as Environment Canada to develop an effective, values-based environmental and social code of practice for its operations abroad to provide a platform for the industry to highlight its best practices and Canadian values. MMS will also work with its international partners to help forge an intergovernmental framework agreement for the sustainable development of minerals and metals, including provisions for emergency preparedness, response and cooperation.





## Strategic Direction 3: Contribute to the Health, Safety and Security of Canadian Communities

Communities in every region of Canada have long enjoyed a special link to minerals and metals. Mineral, metal and explosive activities are the economic base for more than 100 communities in Canada, many in remote and rural areas. These activities not only provide direct and indirect jobs, but they have also become an integral, defining feature of the social fabric of these communities. In many cases, the development of natural resources is the foundation of the region's way of life, and the continued success of the natural resource production activity is the principal factor in the region's economic prospects.

New challenges face many companies and the communities of which they are a part, including the need to better integrate economic, social and environmental concerns through sustainable development practices, high public expectations of environmental stewardship, and the role of Aboriginal peoples.

In responding to these challenges, Canada's minerals, metals and explosives industries must continue to play a role in the health, safety and security of Canadians and their communities.

We plan to work towards this strategic direction through initiatives under the following objectives:

### 3.1 Reduce the potential health and safety hazards associated with the development and use of minerals, metals and explosives

The Canadian public and Canadian workers look to governments to ensure that they live in a healthy and safe community. In addition to fulfilling our mandated responsibilities under the *Explosives Act*, MMS will work with the provinces, territories, industry, Health Canada and other stakeholders to develop expertise and technologies and promote approaches to address health and safety issues related to the development and use of minerals, metals and explosives.

For example, in collaboration with industry and the provinces/territories, MMS will provide expertise and innovative technologies to ensure the safety of workers in underground mines.

### Focus on Canadian Communities:

Minerals and metals activities support Canada's quality of life and high standard of living.

- Mining and mineral processing industries directly employ 400 000 Canadians.
- Over 100 communities across Canada depend on the minerals industry. These communities are located in all regions of the country, but mainly in remote and rural areas.
- There is a potential of economic development opportunities for the Aboriginal population as approximately 1200 Aboriginal communities are located within 200 km of minerals and metals activities.



Inuit Family  
Arctic Bay, NW Baffin Island  
NRCan Photo Library

### **3.2 Promote environmental stewardship in the minerals and metals sector to ensure the sustainable use of Canada's lands**

Environmental stewardship is important in addressing environmental concerns and is a key element of sustainable development. MMS will work with Environment Canada, Fisheries and Oceans Canada and other stakeholders to develop and promote consensus-based approaches to and technologies for environmental issues facing the industry. MMS will also work with its provincial and territorial partners and industry to better integrate environmental concerns with economic and social decisions related to the development and use of minerals and metals. Where environmental assessment is required, MMS will seek to find greater efficiencies in review processes.

For example, MMS will cooperate with the provinces, territories, industry and other knowledge providers to identify innovative solutions to mitigate the impact of mine effluents.

### **3.3 Build capacity for Aboriginal and non-Aboriginal communities to fully participate in decisions about mineral resources that will affect them**

Minerals and metals development can be a powerful force for social and economic cohesion, particularly in northern and rural regions. The involvement of Aboriginal peoples in mineral resource decisions that affect them is a special challenge. By improving the capacity of a community, region or group to participate in mineral development, a greater proportion of the wealth generated by mineral resources will remain within the community or region and contribute to self-sufficiency. Economic and social success must be pursued together.

Through a cooperative effort with Indian and Northern Affairs Canada, one initiative under this objective will focus on the development and implementation of a regionally based multi-stakeholder approach to discussing regional issues, concerns and priorities. These activities will be supported by a national network and by capacity and skills-building initiatives for economic and business development.



### 3.4 Lead Canada to environmentally sound recycling

Resource recovery can and should be the cornerstone of national sustainable development practices. It allows the recapture of capital that has gone into past investments for the re-use by and benefit of future generations. It offers the unique opportunity for every individual and every institution to make a positive contribution to the economy and the environment every single day. Cost-effective and environmentally sound resource recovery can also enhance the efficiency and competitiveness of industry while reducing the volume of potentially harmful wastes going to final disposal, the associated risks to human health and the environment, and waste management costs.

As a priority in this area, MMS is developing the Canadian Resource Recovery Strategy in partnership with other federal departments, industry, and provincial, territorial and municipal governments. This strategy will promote the concept of material and energy efficiencies at the post-consumer, institutional and industrial levels. Domestic and international issues will be addressed with the intention of positioning Canada as a leader in resource recovery and environmentally sound recycling.

Scrap Copper Pipe for Recycling

NRCan Photo Library



## Focus on Canadian Industry:

- first in the world for production of potash and uranium;
- second largest producer of nickel and gypsum;
- in 2000, mining and mineral processing industries contributed \$28.0 billion to Canada's Gross Domestic Product;
- over the last five years, minerals and mineral products accounted for over 60% of volume handled in Canadian ports and some 55% of total rail revenue freight;
- over 2200 Canadian-based companies sell specialized goods and services to mining companies operating in Canada and abroad.

## Strategic Direction 4: Sustain a Vibrant and Responsible Canadian Industry

Canada's minerals and metals industries are confronting challenges on many fronts – a highly competitive and rapidly evolving global economy, public expectations for environmental stewardship and corporate social responsibility, difficulties in accessing resources, changes in the role of government towards more open decision-making, and a heightened vulnerability to shifts in international economic, environmental and social policies. Amid these changes, we must work with provincial and territorial governments through the Intergovernmental Working Group on the Mineral Industry (IGWG) and other stakeholders to provide both the necessary science and technology and a stable and supportive business climate for the Canadian industry so that it can continue contributing to Canada's economic and social development.

We plan to work towards this strategic direction through initiatives under the following objectives:

### **4.1 Promote the development of a fair and internationally competitive Canadian policy, regulatory and fiscal framework**

We will work to ensure that Canada's policy, regulatory and fiscal climate for minerals and metals is internationally competitive and that it provides long-term stability and predictability for the Canadian minerals and metals industries. We will promote the development of decision-making processes that consider the full range of non-regulatory and regulatory instruments. This climate will encourage investment and the innovation that is the foundation for the future of the industry in Canada, and ensure that the industry remains a vital component of this country's economic and social fabric, particularly in remote and rural regions.

For example, through its technical expertise in mining taxation and economic and financial analysis, MMS will work with Finance Canada, the Canada Customs and Revenue Agency, Justice Canada, the provinces, territories and industry to ensure that Canada's fiscal regime remains internationally competitive and stimulates domestic mineral exploration and development.



#### **4.2 Support Canadian efforts in standards development and harmonization**

Fair and effective standards will position Canadian industries well in a competitive marketplace and ensure a consistent approach to environmental and social requirements.

For example, MMS, with other government departments and the international community, will improve science-based regulations for the safe transport and manufacture of explosives and other energetic materials.

#### **4.3 Foster the exploration for and development of minerals and metals in rural and remote areas, with an emphasis on the North and marine offshore**

Canada faces a serious challenge with the depletion of accessible ore reserves of base metals and gold. Access to mineral resources is a key issue for the future. Canada's North and offshore offer huge potential, but there is a lack of needed transportation infrastructure. Development must incorporate the needs of local residents and be done in an environmentally responsible manner.

To respond to this challenge, we will cooperate with provincial and territorial agencies and other federal departments to remove barriers to mineral development in the North and in the marine offshore, and to establish decision-making processes that are flexible, transparent and incorporate public concerns.

Small Community Near  
Chicoutimi, Quebec  
NRCan Photo Library



#### **4.4 Partner with industry, non-governmental organizations and other stakeholders to promote and achieve excellence in environmental and social corporate responsibility**

We will work with industry, non-governmental organizations and other stakeholders to increase knowledge on the environmental and social aspects of sustainable development, and to promote leading practices in environmental and social corporate responsibility. Through our S&T partnerships we will provide information and innovative tools that will assist industry in developing and using mineral and metal resources sustainably. We will continue to encourage partnerships between industry and other stakeholders in order to build the bridges that will make social and environmental initiatives possible and enhance the social and environmental opportunities of minerals and metals projects.

For example, MMS will continue to facilitate biodiversity stewardship partnerships through the Biodiversity Stewardship in Resource Industries Initiative, and to develop information to increase the understanding of the social dimension of sustainable development.

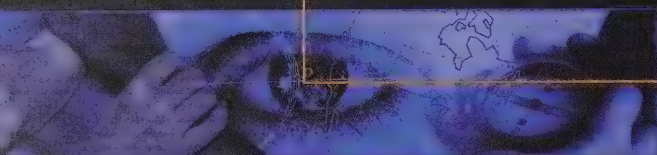
Spruce Seedling on  
Reclamation Site, Elkford, B.C.

NRCan Photo Library





**FOCUS on**



**Knowledge, Strength  
and Partnerships**



## Focus 2006: A Knowledge Organization

### **Achieving our vision will rest on our ability to marshal our human, financial and physical resources and focus on our common goals.**

This strategic vision has set out clear directions for MMS over the next five years. The challenges facing our organization are significant, but so too are our knowledge, skills, relationships, experience and other strengths that we will draw upon as we work towards our vision.

### **We must make careful choices.**

To implement this strategic vision, we will examine our programs to ensure that they are aligned with the proposed objectives, departmental goals and government priorities. We will need to prioritize where our resources will be applied for maximum impact. Annual business plans will provide us with an accountability framework that will take into account MMS resources and strategic priorities.

This strategic vision provides a framework to ensure that MMS has the flexibility required to remain at the forefront of international and domestic developments.

### **We are beginning from a position of strength.**

Our core strength is our people. The Sector's skilled and motivated scientists, economists, researchers, statisticians, policy experts and managers have leading-edge knowledge of the minerals, materials and explosives industries. They understand the economic, social and environmental trends sweeping the globe. They are active players in the rapidly evolving knowledge economy.

To help us develop and apply new knowledge on behalf of Canadians, MMS can call upon well-recognized laboratories and data bases. We also have a proven record of forming innovative and productive partnerships and networks with a wide range of public and private sector organizations at home and abroad. These are the kinds of relationships that will be needed if Canada is to continue on the knowledge frontier and remain a leader in developing and promoting sound policies in support of sustainable development. To remain a leading-edge knowledge organization, we will encourage the exchange of knowledge and ideas with our stakeholders.

What we are talking about in this vision is nothing less than a strategic investment so that Canada can continue to enjoy the social, economic and environmental benefits that come from the sound stewardship of our mineral and metal resources and the use of explosives.

To be a successful organization in the 21st century, MMS must contribute to Canada's place in the world. Our social, environmental and economic well-being must be viewed on a broad canvas – one that looks beyond national borders and our own experience.

### **Focus on Our Partners:**

MMS cannot achieve its goals in isolation. Much of our success in the past has been achieved through a cooperative effort with our partners. Our vision will only be realized through continued successful multi-stakeholder partnerships.

Some of our partners and partnership mechanisms include:

- other NRCan sectors
- federal government departments
- central agencies
- regional development agencies
- provincial and territorial governments
- municipal governments
- advisory committees
- private sector
- non-governmental organizations
- academia
- international governments and organizations
- national Aboriginal associations

## **We must ensure that MMS remains a leading-edge knowledge organization.**

To build on our strengths, we must ensure that MMS remains a dynamic knowledge organization capable of responding to the challenges and opportunities ahead.

We must continue to value and support the creation and application of knowledge. We will need to make strategic investments in knowledge creation, using our people, networks and capital infrastructure, so that we have the internal capacity in place to continue working effectively on behalf of Canadians.

A key area in the effort to ensure a knowledge organization will be our use of the Internet as a mechanism to promote the innovative work of MMS and to enhance our on-line services to Canadians and our other clients. MMS will undergo fundamental change as it adjusts to the Internet environment promoted under the Government On-Line (GOL) initiative. MMS already embodies many of the themes promoted through GOL, such as sharing and creating knowledge, and working through partnerships. Over the next five years, we have the opportunity, through the NRCan On-Line Program, to take a strong leadership role and make a significant contribution to Canada's knowledge-based society.

For Canada, for MMS, for our clients and for our partners, the years ahead promise to be both challenging and rewarding.

**Compilation of Underground Mine  
and Tailings Database**

NRCan Photo Library









